NC/QC/YD-W2/2019-20/KC-C1 Date: 08-05-2019

## 1. TEST REPORT ON CEMENT:

**Sub**: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

**TABLE 1.1:**

| SL No | Name of Test | Test Results | Requirements as per IS 8112-1989 |
|---|---|---|---|
| 1 | Initial setting time | **168 min** | Shall not be less than 30 min |
| 2 | Final setting time | **250min** | Shall not be more than 600 min |
| 3 | Fineness (by dry sieving on IS 90 micron sieve) | **1.38 %** | Not to exceed 10.0% |
| 4 | Soundness test(by Le-Chatelier's method) | **1.96mm** | Shall not be more than 10 mm |
| 5 | Compressive strength a) 3 days (average of three results) | **27.35 N/Sq mm** | Shall not be less than 27 N/Sqmm |

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NC/QC/YD-W2/2019-20/KC-PCC1

Date: 08-05-2019

## 1. TESTING OF COARSE AND FINE AGGREGATES:

**Sub:** Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.:** Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### 1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

| IS Sieve Size, mm | Percentage passing | Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing | |
|---|---|---|---|
| | 40 mm Sample | Single size | Graded |
| 40mm | 100.00 | 85-100 | 90 – 100 |
| 20mm | 63.50 | 0 -20 | 30- 70 |
| 10mm | 34.80 | 0 -5 | 10- 35 |
| 4.75mm | 3.25 | ------ | 0- 5 |

### 2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

| IS Sieve Size, mm | Percentage Passing | Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing | | | Remarks |
|---|---|---|---|---|---|
| | | Zone-I | Zone-II | Zone -III | |
| 04.75 | 96.80 | 90-100 | 90-100 | 90-100 | The Sample Conforms to Grading **Zone-II** |
| 02.36 | 86.25 | 60-95 | 75-100 | 85-100 | |
| 01.18 | 62.45 | 30-70 | 55-90 | 75-100 | |
| 600.mic | 58.90 | 15-34 | 35-59 | 60-79 | |
| 300.mic | 19.25 | 5-20 | 8-30 | 12-40 | |
| 150.mic | 6.30 | 0-10 | 0-10 | 0-10 | |

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NC/QC/YD-W2/2019-20/KC-C2

Date: 13-05-2019

## 1. TEST REPORT ON CEMENT:

**Sub**: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

**TABLE 1.1:**

| SL No | Name of Test | Test Results | Requirements as per IS 8112-1989 |
|---|---|---|---|
| 1 | Initial setting time | 155 min | Shall not be less than 30 min |
| 2 | Final setting time | 275 min | Shall not be more than 600 min |
| 3 | Fineness (by dry sieving on IS 90 micron sieve) | 2.03 % | Not to exceed 10.0% |
| 4 | Soundness test(by Le-Chatelier's method) | 1.95 mm | Shall not be more than 10 mm |
| 5 | Compressive strength<br>a) 3 days (average of three results) | 28.85 N/Sq mm | Shall not be less than 27 N/Sqmm |

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Page No. 1/1,

For Newzen Consultants Bangalore

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NC/QC/YD-W2/2019-20/KC-FA1 Date: 13-05-2019

## 1. TESTING OF FINE AGGREGATES :

**Sub**: Testing of Fine Aggregates.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TABLE - 1.1 : SIEVE ANALYSIS :**

| IS Sieve Size,mm | Percentage Passing | Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing | | | Remarks |
|---|---|---|---|---|---|
| | | Zone-I | Zone-II | Zone -II | |
| 04.75 | 95.45 | 90-100 | 90-100 | 90-100 | The Sample Conforms to Grading Zone-II |
| 02.36 | 86.40 | 60-95 | 75-100 | 85-100 | |
| 01.18 | 65.75 | 30-70 | 55-90 | 75-100 | |
| 600. mic | 41.65 | 15.34 | 35-59 | 60-79 | |
| 300.mic | 22.40 | 5-20 | 8-30 | 12-40 | |
| 150.mic | 6.35 | 0-10 | 0-10 | 0-10 | |

**TABLE 1.2 ;**

| Sl No | Test Conducted | Sample | Results | Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2002) |
|---|---|---|---|---|
| 1 | Bulking of Sand | 001 | 17.85 % | ----- |
| 2 | Silt Content | ---- | 0.63 % | Not more than 8% |
| 3 | Specific Gravity | ---- | 2.61 | ------- |

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NC/QC/YD-W2/2019-20/KC-CB1

Date: 22-05-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{20}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 15-05-19 | 22-05-19 | 07 | 22500 | 385 | 17.11 | 17.04 |
| | 002 | " | " | " | " | 375 | 16.67 | |
| | 003 | " | " | " | " | 390 | 17.33 | |

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NC/QC/YD-W2/2019-20/KC-CB3 Date: 27-05-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{20}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 20-05-19 | 27-05-19 | 07 | 22500 | 360 | 16.00 | 16.37 |
| | 002 | " | " | " | " | 375 | 16.67 | |
| | 003 | " | " | " | " | 370 | 16.44 | |

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NC/QC/YD-W2/2019-20/KC-CB4 Date: 28-05-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{20}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 21-05-19 | 28-05-19 | 07 | 22500 | 370 | 16.44 | 16.52 |
| | 002 | " | " | " | " | 365 | 16.22 | |
| | 003 | " | " | " | " | 380 | 16.89 | |

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NC/QC/YD-W2/2019-20/KC-CB2A Date: 13-06-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{20}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 16-05-19 | 13-06-19 | 29 | 22500 | 490 | 21.78 | **22.00** |
| | 002 | " | " | " | " | 500 | 22.22 | |
| | 003 | " | " | " | " | 495 | 22.00 | |

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NC/QC/YD-W2/2019-20/KC-CB3A Date: 17-06-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{20}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 20-05-19 | 17-06-19 | 28 | 22500 | 480 | 21.33 | 21.78 |
| | 002 | " | " | " | " | 490 | 21.78 | |
| | 003 | " | " | " | " | 500 | 22.22 | |

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NC/QC/YD-W2/2019-20/KC-CB4A Date: 18-06-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{20}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 21-05-19 | 18-06-19 | 29 | 22500 | 495 | 22.00 | 22.07 |
| | 002 | " | " | " | " | 505 | 22.44 | |
| | 003 | " | " | " | " | 490 | 21.78 | |

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Date: 17-06-2019

TABLE 1.2

| SL No | Test conducted | Test Results | Tests Conforms to IS 2386( Part I to IV)– 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|---|---|---|---|
| 1. | Water absorption, % | 0.38 % | Not more than 2.0 % |
| 2. | Liquid Limit, % | 19.34 | Not more than 25.0 % |
| 3. | Plasticity Index, % | NP | Not more than 6.0 % |
| 4. | Moisture Content, % | 6.39 | ---------- |
| 5. | Aggregate Impact Value, % | 27.14 | Not more than 40.00 % |

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Date: 19-06-2019

**TABLE 1.2**

| SL No | Test conducted | Test Results | Tests Conforms to IS 2386( Part I to IV)– 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|---|---|---|---|
| 1. | Aggregate Impact Value | 26.99 % | Not more than 30.00 % |
| 2. | Combined Flakiness and Elongation index, % | 29.14 % | Not more than 35.0 % |
| 3. | Water absorption, % | 0.38 % | Not more than 2.0 % |
| 4. | Plasticity Index, % | NP | Not more than 6.0 % |

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NC/QC/YD-W2/2019-20/KC-CD1

Date: 26-06-2019

## 1. TEST REPORT ON COARSE AGGREGATE:

**Sub**: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}

**Ref.**: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TABLE 1.1 :**

| SL No | Test conducted | Test Results | Tests Conforms to IS 2386( Part I to IV)– 1963 ( Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013. |
|---|---|---|---|
| 1. | Aggregate Impact Value | 23.94 % | Not more than 27.00 % for DBM |
| 2. | Combined Flakiness and Elongation index, % | 25.61 % | Not more than 35.0 % |
| 3. | Water absorption, % | 0.38 % | Not more than 2.0 % |
| 4. | Specific gravity | 2.64 | ------- |
| 5. | Soundness | 6.59 % | Max. 12 % in Sodium Sulphate |

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NC/QC/YD-W2/2019-20/KC-DBM1 Date: 02-07-2019

**1.TEST REPORT ON BITUMINOUS MIXES :**

**(BITUMEN EXTRACTION TEST & GRADATION TEST)**

**Sub:** To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}

**Ref.:** Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TEST RESULTS**

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.52 %**

2. **Gradation Test**

**TABLE 1.1**

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2) |
|---|---|---|
| 37.5 | 100 | 100 |
| 26.5 | 97.10 | 90-100 |
| 19.0 | 86.40 | 71-95 |
| 13.20 | 65.90 | 56-80 |
| 4.75 | 42.75 | 38-54 |
| 2.36 | 32.40 | 28-42 |
| 0.300 | 13.75 | 7-21 |
| 0.075 | 3.10 | 2-8 |

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NC/QC/YD-W2/2019-20/KC-DS1 Date: 03-07-2019

**1.TEST REPORT ON BITUMINOUS MIXES :**
**(STABILITY OF BITUMINOUS MIX)**

**Sub:** To determine the stability of bituminous mix for DBM mix sample.

{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}

**Ref.**: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TEST RESULTS**

**Table 1: Properties of DBM (Gr-2) Mix**

| Sl. No. | Test Property | *Test results obtained by Marshall method | Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications |
|---|---|---|---|
| 1 | Marshall Stability (75 blows) (At 60°C), kgs. | 1374 | 900 |
| 2 | Marshall Flow at 60°C, mm. | 2.94 | 2.0 - 4.0 |

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NC/QC/YD-W2/2019-20/KC-BC1 Date: 03-07-2019

**1.TEST REPORT ON BITUMINOUS MIXES :**

**(BITUMEN EXTRACTION TEST & GRADATION TEST)**

**Sub:** To determine the percentage of bitumen and gradation for BC mix sample.

{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}

**Ref.:** Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TEST RESULTS**

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.41 %**

2. **Gradation Test**

**TABLE 1.1**

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2) |
|---|---|---|
| 19.0 | 100 | 100 |
| 13.2 | 96.40 | 90-100 |
| 9.5 | 81.95 | 70-88 |
| 4.75 | 63.80 | 53-71 |
| 2.36 | 55.20 | 42-58 |
| 1.18 | 42.95 | 34-48 |
| 0.600 | 30.40 | 26-38 |
| 0.300 | 22.75 | 18-28 |
| 0.150 | 17.10 | 12-20 |
| 0.075 | 8.65 | 4-10 |

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NC/QC/YD-W2/2019-20/KC-BC2 Date: 04-07-2019

**1.TEST REPORT ON BITUMINOUS MIXES :**

**(BITUMEN EXTRACTION TEST & GRADATION TEST)**

**Sub:** To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}

**Ref.:** Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TEST RESULTS**

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.43 %**

2. **Gradation Test**

**TABLE 1.1**

| Sieve Size, mm | Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation) | Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2) |
|---|---|---|
| 19.0 | 100 | 100 |
| 13.2 | 99.05 | 90-100 |
| 9.5 | 86.60 | 70-88 |
| 4.75 | 62.10 | 53-71 |
| 2.36 | 55.75 | 42-58 |
| 1.18 | 41.30 | 34-48 |
| 0.600 | 29.75 | 26-38 |
| 0.300 | 19.45 | 18-28 |
| 0.150 | 16.00 | 12-20 |
| 0.075 | 7.35 | 4-10 |

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NC/QC/YD-W2/2019-20/KC-BS2 Date: 05-07-2019

**1.TEST REPORT ON BITUMINOUS MIXES :**
**(STABILITY OF BITUMINOUS MIX)**

**Sub:** To determine the stability of bituminous mix for BC mix sample.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.:** Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

**TEST RESULTS**

**Table 1: Properties of BC (Gr-2) Mix**

| Sl. No. | Test Property | *Test results obtained by Marshall method | Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications |
|---|---|---|---|
| 1 | Marshall Stability (75 blows) (At 60°C), kgs. | 1351 | 900 |
| 2 | Marshall Flow at 60°C, mm. | 3.81 | 2.0 - 4.0 |

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NC/QC/YD-W2/2019-20/KC-C3 Date: 24-06-2019

## 1. TEST REPORT ON CEMENT:

**Sub**: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

**TABLE 1.1:**

| SL No | Name of Test | Test Results | Requirements as per IS 8112-1989 |
|---|---|---|---|
| 1 | Initial setting time | 169 min | Shall not be less than 30 min |
| 2 | Final setting time | 271 min | Shall not be more than 600 min |
| 3 | Fineness (by dry sieving on IS 90 micron sieve) | 2.02 % | Not to exceed 10.0% |
| 4 | Soundness test(by Le-Chatelier's method) | 1.93 mm | Shall not be more than 10 mm |
| 5 | Compressive strength b) 3 days (average of three results) | 28.75 N/Sq mm | Shall not be less than 27 N/Sqmm |

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NC/QC/YD-W2/2019-20/KC-PCC2

Date: 24-06-2019

## 1. TESTING OF COARSE AND FINE AGGREGATES:

**Sub**: Testing of Coarse and Fine aggregates to be used for bed concrete.
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### 1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

| IS Sieve Size, mm | Percentage passing | Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing | |
|---|---|---|---|
| | 40 mm Sample | Single size | Graded |
| 40mm | 100.00 | 85-100 | 90 – 100 |
| 20mm | 64.15 | 0 -20 | 30- 70 |
| 10mm | 21.65 | 0 -5 | 10- 35 |
| 4.75mm | 5.94 | ------ | 0- 5 |

### 2. FINE AGGREGATES TABLE - SIEVE ANALYSIS:

| IS Sieve Size, mm | Percentage Passing | Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing | | | Remarks |
|---|---|---|---|---|---|
| | | Zone-I | Zone-II | Zone -III | |
| 04.75 | 96.05 | 90-100 | 90-100 | 90-100 | The Sample Conforms to Grading **Zone-II** |
| 02.36 | 82.80 | 60-95 | 75-100 | 85-100 | |
| 01.18 | 74.95 | 30-70 | 55-90 | 75-100 | |
| 600.mic | 41.60 | 15-34 | 35-59 | 60-79 | |
| 300.mic | 22.40 | 5-20 | 8-30 | 12-40 | |
| 150.mic | 7.55 | 0-10 | 0-10 | 0-10 | |

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NC/QC/YD-W2/2019-20/KC-CB6

Date: 03-07-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub:** Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{30}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 26-06-19 | 03-07-19 | 07 | 22500 | 525 | 23.33 | 23.70 |
| | 002 | " | " | " | " | 540 | 24.00 | |
| | 003 | " | " | " | " | 535 | 23.78 | |

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Date: 24-07-2019

NC/QC/YD-W2/2019-20/KC-CB5A

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

### CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : $M_{30}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength (N/ $mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 26-06-19 | 24-07-19 | 28 | 22500 | 720 | 32.00 | 32.07 |
| | 002 | " | " | " | " | 730 | 32.44 | |
| | 003 | " | " | " | " | 715 | 31.78 | |

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NC/QC/YD-W2/2019-20/KC-CB6A

Date: 24-07-2019

## 1. TEST REPORT ON CEMENT CONCRETE CUBES:

**Sub**: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Improvements to Roads and Drains at Kamakshamma layout and Chowdeshwari layout in ward no-02 of Yelahanka Sub division.}
**Ref.**: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
Yelahanka Sub Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: Sri. Y.R.Sridhar, Bangalore.

### RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : $M_{30}$

**TABLE 1.1:**

| Sl No | Location/ Identification* | Date of Casting* | Date of Testing | Age in Days | C/S Area in $mm^2$ | Maximum Load in K.N | Compressive Strength ($N/mm^2$) | Avg. Value |
|---|---|---|---|---|---|---|---|---|
| 1 | 001 | 26-06-19 | 24-07-19 | 29 | 22500 | 735 | 32.67 | **32.37** |
| | 002 | " | " | " | " | 720 | 32.00 | |
| | 003 | " | " | " | " | 730 | 32.44 | |

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